In the Claims

1. (currently amended) A method of operating a network switch which is an edge switch in an Ethernet communication network having a multiplicity of sub-nets, is arranged to receive and forward packets which include media access control address data and network address data, and is in communication with a core router via an uplink, comprising:

performing a network address look-up in respect of a ~~packet which~~ packet, which is received by the edge switch from a source local to the edge switch and on a first sub-net ~~and~~ only if the packet has a media access control destination address of the core router ~~on a second sub-net~~;

forwarding the packet directly towards its destination in response to the network destination address data in the packet, without the packet traversing the core router via the uplink, when the network destination address is a ~~local~~ destination local to the edge switch, but on a second sub-net; and

forwarding the packet from the edge switch to the core router via the uplink, whenever the network destination address is a destination that is not local to the edge switch;

said edge switch maintaining look-up tables of media access control addresses and network addresses only for local sources and destinations on both the first and second sub-nets.

2. (original) A method according to claim 1 wherein the network switch forwards the packet to the core router in response to media access control data in the packet.

3. (original) A method according to claim 1 wherein the network switch provides a default route to the core router for network destination addresses which are not local to the network switch.

4. (currently amended) A network edge switch having ports for the reception and forwarding of Ethernet packets which include media access control address data and network address data and ~~organised:~~
~~said edge switch is~~ organized:

(a) to perform a media access control address look-up in respect of a first packet received by the edge switch;

(b) to bridge the packet if a source and a destination of the packet are on ~~the same~~ a same subnet and local to the edge switch;

(c) to perform a network destination address look-up in respect of a second packet which is received by the edge switch from a source local to the edge switch and on a first sub-net and has a network destination address on a second sub-net, the network destination address look-up performed only if the media access control destination address of the second packet is to a core router connected to the edge switch by an uplink;

(d) to forward said second packet directly towards its destination in response to network address data in said second packet when the destination thereof is a local destination; and

(e) to forward said second packet from the edge switch by a default route, in response to media access control address data in said second packet, if the destination thereof is not local to the edge switch, said edge switch having look-up tables of media access control addresses and network addresses for local sources and destinations on both the first and second sub-nets.

5. (currently amended) A combination of a core router and an edge switch, connected by an uplink, for the reception and forwarding of Ethernet packets, wherein said edge switch is ~~organised~~ organized:

(a) to perform a media access control address look-up in respect of a first packet received by the edge switch;

(b) to bridge said first packet when the media access control source and a destination addresses of the packet are for devices on ~~the same~~ a same subnet and local to the ~~network~~ edge switch;

(c) to perform a network destination address look-up in respect of a second packet which is received by the ~~network~~ edge switch from a source local to the edge switch and on a first sub-net and has a destination on a second sub-net, wherein the network destination address look-up is performed only if the media access control destination address of the packet is the core router media access control address;

(d) to forward said second packet directly towards its destination in response to network address data in said second packet when the destination thereof is a local destination; and

(e) to forward said second packet to said core router, via the uplink, from the ~~network~~ edge switch, in response to media access control address data in said second packet, if the destination thereof is not local to the edge switch, said ~~network~~ edge switch having look-up tables of media access control addresses and network addresses only for ~~local~~ sources and destinations local to the edge switch on both the first and second sub-nets.